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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/885,375	06/19/2001	Shousheng He	34650-00593	3992
23932	7590	09/07/2004	EXAMINER	
JENKENS & GILCHRIST, PC 1445 ROSS AVENUE SUITE 3200 DALLAS, TX 75202			MEEK, JACOB M	
			ART UNIT	PAPER NUMBER
			2637	

DATE MAILED: 09/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/885,375

Applicant(s)

HE, SHOUSHENG

Examiner

Jacob Meek

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 June 2001.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 - 15 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1 - 5, 9 - 15 is/are rejected.  
7) ☒ Claim(s) 6 - 8 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 06/19/2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to because because of numerous handwritten annotations in submitted drawings. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 11, 12, 14, and 15 rejected under 35 U.S.C. 102(b) as being anticipated by Skold (US Patent 5,373,507).

With regard to Claim 1, Sköld teaches a method for estimating a transmission channel using any consecutive 16 symbol segment of said 26-symbol training (see Figure 4, CORR) sequence to estimate, without matrix operation, the transmission channel for different equalizer window sizes at different synchronization points (see Figure 3, Column 3 line 31 – Column 4 line 14)

With regard to Claim 11, Sköld teaches a method for estimating a transmission channel using any consecutive 16-symbol segment of said 26-symbol training sequence to (see Figure 4, CORR) estimate, without matrix operation, the transmission channel for different equalizer window sizes of from 1 to 8 symbols long (See Column 5, lines 15 – 40).

With regard to Claim 12, limitations as taught above in claims 11. Sköld (Summary of Invention) teaches the use of delayed segments for calculations.

With regard to Claim 14, Sköld teaches an apparatus utilizing the method as described in Claim 11 above.

With regard to Claim 15, Sköld teaches an apparatus for equalization of transmission channel including a receiver (see Figure 4) including a channel estimation-based equalizer (See Column 5, lines 15 – 40), which uses joint synchronization and equalizer window sizing to optimize the equalizer operation (See Column, line 33 – Column 4, line 28).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 – 5, 9, 10 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Björk in view of Sköld.

With regard to Claim 2, Sköld teaches the limitations of Claim 1 above and calculation of tap values using 2-dimensional computations (see Column 1, line 50 – Column 3, line 14 and Figure 3). Sköld fails to teach the use of an LSE algorithm. Björk teaches the use of the LSE algorithm (see column 6 lines 45 – 56). Björk's invention provides an improved method for the measuring and compensating for time dispersion (see Summary, 1<sup>st</sup> paragraph). It would have obvious to one of ordinary skill in the art to combine Björk's invention with Sköld's invention to produce a receiver of superior performance.

With regard to Claim 3, limitations as taught above in claims 1 and 2. Sköld and Björk teach GSM. EDGE is an enhancement of GSM and would be obvious to one of ordinary skill of the art to incorporate the art of GSM into an EDGE receiver.

With regard to Claim 4, limitations as taught above in claims 1 and 2. Sköld fails equalizer windows spans of 1 – 8 taps. Björk teaches the using of a filter having variable tap lengths (see column 11, lines 18 – 64). Motivation to combine discussed above in Claim 2.

With regard to Claim 5, limitations as taught above in claims 1 and 2. Sköld (Summary of Invention) and Björk (Column 1 lines 40 – 60) teach the use of delayed segments for calculations.

With regard to Claim 9, Sköld teaches the limitations of Claim 1. Sköld fails to teach the use of an LSE algorithm. Björk teaches the use of the LSE algorithm (see column 6 lines 45 – 56). Motivation to combine discussed in Claim 2 above.

With regard to Claim 10, Björk teaches the limitations of Claim 2 above the use of an LSE approach for joint synchronization and equalizer window sizing (See column 7, lines 5 – 14, and column 13, lines 25 - 65).

With regard to Claim 13, Sköld teaches the limitations of Claim 11. Sköld fails to teach the use of an LSE algorithm. Björk teaches the use of the LSE algorithm (see column 6 lines 45 – 56). Motivation to combine discussed in Claim 2 above.

### ***Allowable Subject Matter***

Claims 6 – 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacob Meek whose telephone number is (571)272-3013. The examiner can normally be reached on 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571)272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JMM

  
TEMESCHEN SHEBETINSAE  
PRIMARY EXAMINER